

# ***Liberator™***

## **Owner's Manual**

### ***Liberator™***

**Center-Wheel Drive Power Chair**

**SM8500 L**



**RUN WITH THE SUN**  
Solar Mobility LLC

**YOUR LIFE IN MOTION**

1426 East 3<sup>rd</sup> Ave Suite B110,  
Kennewick, WA 99336

Tel: (509) 851-3611

[www.solarmobilityinc.com](http://www.solarmobilityinc.com)

## FOR YOUR RECORDS

Please fill in your *Liberator*<sup>™</sup> information below. This information will be useful in the event that you ever need to contact Solar Mobility LLC concerning your power chair.

Your *Liberator*<sup>™</sup>.

Model \_\_\_\_\_

Serial Number \_\_\_\_\_

Date of Purchase \_\_\_\_\_

Body Color \_\_\_\_\_

Options \_\_\_\_\_

Your Solar Mobility LLC representative or dealer Name .

\_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Please remember to fill in and return your warranty registration card.

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# INTRODUCTION

Congratulations on the purchase of your new *Liberator*™ power chair. The Center-wheel drive *Liberator*™ combines cutting-edge technology with an attractive design that is also highly functional in today's world. We at Solar Mobility LLC know that you have chosen a power chair that will give you years of dependable operation and also will enhance the quality of your life by providing you with the mobility to experience an active daily lifestyle.

Even though your new *Liberator*™ is both user-friendly and designed for maximum maneuverability in even the tightest spaces, we ask that you please read, understand and follow all of the instructions and suggestions in this manual before you operate your *Liberator*™ for the first time. The safe use of your new power chair is very important to us.

If you feel that you do not understand the instructions and suggestions presented in this owner's manual, or if, for any reason, you do not feel capable of performing the activities necessary to assemble, disassemble, operate, or maintain your *Liberator*™ please contact your local Solar Mobility LLC representative or call Solar Mobility LLC. Technical Support Services at (509) 851-3611.

Solar Mobility LLC cannot be held responsible for personal injury or property damage resulting from the unsafe or the improper use of any of our broad range of health and personal mobility products. Our Research and Development Department, our Quality Control Department, and our Engineering Department have used the latest product specifications and the latest product design information to produce this owner's manual. Solar Mobility LLC reserves the right to implement changes into our product lines when those changes become desirable or necessary. If changes are implemented into our product line, there may be minor differences between the product you purchased and the illustrations and instructions in this owner's manual.

Please fill out and mail the enclosed warranty registration card on page 37. We at Solar Mobility LLC would appreciate hearing about the dependability of your *Liberator*™ and about the convenience of mobility it has provided for you. We would also appreciate hearing about the service you received from your local Solar Mobility LLC representative.

Solar Mobility LLC.  
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Web Site:

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## Indications for use

The intended use of the *Liberator*<sup>™</sup> is to provide mobility for those persons limited to a seated position, which are capable of operating a simple hand control.

The *Liberator* may be operated on internal DC batteries, which can be recharged by using a wall-charger and supplemented by using the detachable solar assisted battery maintaining device (Solar Companion).

## SAFETY

Your *Liberator*<sup>™</sup> is a battery-operated personal mobility vehicle. Please exercise caution and consideration when you are operating it. Driving your *Liberator*<sup>™</sup> carefully and thoughtfully will help ensure your personal safety and the safety of other people.

**NOTE: Before learning to operate your *Liberator*<sup>™</sup>, have your Solar Mobility LLC representative determine if it is advisable for you to practice getting on and off your *Liberator*<sup>™</sup> and operating it in the presence of an attendant.**

### BEFORE GETTING ON YOUR *Liberator*<sup>™</sup>

- ◆ Check to be certain that the power is turned off. See “Operation” on pages 24-31. This will eliminate the possibility of accidentally activating the joystick and causing injury to yourself or to others.
- ◆ Check to be certain that your *Liberator*<sup>™</sup> is not in freewheel mode. See the “Operation” section on pages 24-31.
- ◆ Flip up the armrests.
- ◆ If your chair is equipped with leg rests, move them to the sides.
- ◆ If your chair is equipped with a footrest, flip it to the “up” position.

### GETTING ON YOUR *Liberator*<sup>™</sup>

- ◆ While being careful not to entangle yourself in the leg rests or the footrest, seat yourself comfortably and securely on the seat.
- ◆ Adjust the leg rests or flip down the footrest.
- ◆ Flip down or replace the armrests.
- ◆ Fasten the lap belt, if your chair is so equipped.

### GETTING OFF YOUR *Liberator*<sup>™</sup>

- ◆ Make certain that the power is turned off.
- ◆ Unfasten the lap belt, if your chair is so equipped.
- ◆ Flip up the armrests.
- ◆ Flip up the footrest, or move the leg rests to the sides.
- ◆ While being careful not to entangle yourself in the leg rests or the footrest, carefully stand and step away from the chair.

### MAXIMUM WEIGHT

Your *Liberator*<sup>™</sup> has been rated to a maximum payload (passenger and anything else being carried on the *Liberator*<sup>™</sup>) of **300** pounds. Exceeding the maximum weight rating will void the warranty.



**WARNING** Exceeding the maximum weight rating may result in injury to yourself and to others. This will also void your warranty.

## DRIVING ON AN INCLINE

- ◆ Drive with caution when attempting to negotiate any incline, even handicap access ramps.
- ◆ **Always** climb or descend a gradient by driving straight up or straight down the face of the slope.
- ◆ **Do not** traverse or drive across the face of a gradient.
- ◆ **Do not** attempt to negotiate an incline that is covered with snow, ice, cut or wet grass, leaves, or any other potentially hazardous material.
- ◆ **Do not** back down an incline.
- ◆ Try to keep your *Liberator*™ moving when climbing an incline. If you do come to a stop, restart and accelerate slowly and carefully.
- ◆ **Do not** try to descend or climb an incline that is greater than the maximum incline stated in the specifications section of this manual.



### WARNING

**If, while you are driving down a slope, your chair starts to move faster than you feel is safe, gently release the joystick and allow your *Liberator*™ to come to a stop. When you feel that you again have control of your power chair, adjust the speed control to a lower setting then push the joystick forward and continue safely down the remainder of the slope.**

## MEDICATION

Always check with your physician to determine if any of the medications you are taking may affect your judgment and/or your ability to operate your *Liberator*™.



### WARNING

**Do not connect or allow anyone except an authorized Solar Mobility LLC representative to connect any electrical or mechanical device to your *Liberator*™. Unauthorized accessories will void the warranty and may cause injury.**

# SAFETY

- ◆ **Do not** attempt to use your *Liberator*™ on an escalator. Always use an elevator.
- ◆ **Do not** carry passengers on your power chair.
- ◆ **Do not** operate your *Liberator*™ if it is not functioning properly.
- ◆ **Do not** attempt to perform wheelies with the *Liberator*™.
- ◆ **Do not** use your wheelchair during workouts.
- ◆ **Use caution** when driving on soft or uneven surfaces such as grass, gravel, and on decks where there is no railing.
- ◆ **Never** drive on the roadway, except when you must cross the street.
- ◆ **Always** cross streets at intersections and use the most direct route, making sure that your path is clear and that you are visible to motor traffic.
- ◆ **Never** drive your *Liberator*™ up or down a step or curb that is higher than 1 1/2 inches.
- ◆ **Never** back up or down a step or curb.
- ◆ **Never** operate your *Liberator*™ while you are under the influence of alcohol.
- ◆ **Do not** operate or store your power chair where it will be exposed to rain, snow, mist, and below freezing temperatures.
- ◆ **Do not** operate your power chair on slippery, icy or salted surfaces.
- ◆ **Never** sit on your power chair when it is in freewheel mode and on an incline or decline.
- ◆ **Never** place your power chair into freewheel mode without a trained assistant present.
- ◆ **Do not** sit on your power chair when it is freewheel mode without the presence of a trained assistant.
- ◆ **Do not** modify your power chair or Solar Companion in any way that is not authorized by Solar Mobility LLC.
- ◆ **Do not** disassemble the tire. If disassembly is required, have your authorized *Liberator* dealer perform any necessary maintenance or repair.
- ◆ **Do not attempt to** inflate the tires of your *Liberator*™. Your *Liberator*™ is equipped with foam-filled flat free tires that do not require inflation.

# SAFETY

- ◆ **Do not** place any weight or objects on top of the Solar Companion, it may damage the solar panel.
- ◆ **Do not** place hands or fingers near where pinch points are indicated.
- ◆ **Never** transport your Liberator with the Solar Companion in the down position without the detent pin Tee handles in the holes provided for the down position.



**WARNING WATCH OUT FOR AND AVOID OPEN LEVER HANDLES ON DOORS**

Please be sure to follow this important warning when transferring onto or off of the Liberator power wheelchair:



**WARNING**

**NEVER TRANSFER ONTO OR OFF OF THIS POWER WHEELCHAIR USING THE SEAT BACKREST FOR SUPPORT DURING TRANSFER. THE SEAT BACK MAY FOLD DOWN AND MAY CAUSE YOU TO LOSE YOUR BALANCE AND COULD RESULT IN PERSONAL INJURY.**



# EMI/RFI

The rapid development of electronics, especially in the area of communications, has saturated our environment with electromagnetic (radio) waves that are emitted by television transmitters, cellular phones, citizen's band radios (CBs), amateur radios (ham radios), wireless computer links, microwave transmitters, paging transmitters, etc. These electromagnetic (EM) waves are invisible and increase in strength the closer one gets to the source of transmission. When these energy waves act upon electrical devices and cause them to malfunction or to function in an erratic or uncontrolled manner, they are referred to as *Electromagnetic Interference (EMI)* or *Radio Frequency Interference (RFI)*.

## **EMI/RFI AND YOUR *Liberator*™ with Solar Companion**

All electrically powered vehicles, including power chairs are susceptible to EMI/RFI. This interference could result in abnormal, unintended movement of a power wheelchair.

The FDA has determined that each make and model of power chair can resist EMI/RFI to a certain level. The higher the level of immunity, the greater the degree of protection from EMI/RFI measured in volts per meter (V/m). The FDA has also determined that current technology is capable of providing 20 V/m of immunity to EMI/RFI, which would provide useful protection against common sources of interference.

Based on that determination, the FDA has written to the manufacturers of power wheelchairs and asked them to test their new products to be certain that they provide a reasonable degree of immunity to EMI/RFI. The FDA suggests that power chairs should have an immunity level of 20 V/m.

The immunity level of the *Liberator*™ with Solar Companion is 20 V/m.

## **EMI/RFI RECOMMENDATIONS**

- ◆ Do not turn on or use hand-held personal electronic communication devices such as cellular phones, walkie-talkies, and CB radios while your power chair is turned on.
- ◆ Be aware of any nearby transmitters (radio, television, microwave, etc.) on your intended route and avoid operating your chair close to any of those transmitters.
- ◆ Turn off the power if your *Liberator*™ is going to be in a stationary position for any length of time.
- ◆ Be aware that adding accessories or components or modifying your power chair may make it more susceptible to EMI/RFI.
- ◆ If unintended movement or brake release occurs, turn your power chair off as soon as it is safe to do so.
- ◆ Report all incidents of unintended movement or brake failure to your *Liberator* representative or to Solar Mobility LLC at (509) 851-3611.



## **WARNING**

Turn off your power chair as soon as it is safely possible if unintended or uncontrollable motion occurs or if unintended brake release occurs.

# LIBERATOR SPECIFICATIONS

<b>Model</b>	<b>SM8500LSC</b>		
<b>Weight</b>			
Base	101 lbs.		
Seat (Width 20" X Depth 18-20." Captain's Chair Seat)	109 lbs.		
Solar Companion with Mounts	20 lbs.		
2 Batteries needed to operate Liberator	NF22 - 39 lbs.		
Total Weight with NF22 Batteries	308 lbs.		
<b>Dimensions</b>			
Height	52.5"		
Length	40"		
Width (outside of tires)	27"		
<b>Maximum Incline</b>	10 degrees		
<b>Maximum Speed</b>	4.09 mph		
<b>Maximum Load Capacity</b>	300 lbs.		
<b>Pivot Width - Radius</b>	27.0 "		
<b>Wheel Sizes</b>			
Drive Wheels (2)	10" X 3.5"		
Casters (4)	4" X 2"		
<b>Maximum Seat Back Angle</b>	126 degrees		
<b>Seat Widths Available in</b>	20.5"– 23"		
<b>Effective Seat Depth</b>	18.3"		
<b>Armrest Height</b> (Adjustable) (Measured from seat cushion)	7.5" – 11.5"		
<b>Seat Heights</b> (Ground to Top of Seat)			
Minimum Seat Height (NF22 Batteries)	24.4"		
Maximum Seat Height (NF22 Batteries)	30.5"		
<b>Seat Back Heights</b> (Ground to Top of Headrest)			
Headrest Not Extended (Captain's Chair)*	53.5"		
Headrest Extended (Captain's Chair)*	57.5"		
Without Headrest (Captain's Chair)*	46.25"		
<b>Chair Height with Solar Companion</b> (Ground to Top)			
Minimum Height	58.25"		
Maximum Height	64.25"		
<b>Footrest</b> (Adjustable Height) (Measured from top of footrest to ground)	5", 5 5/8", 6 1/4", 6 7/8", 7 1/2"		
<b>Footrest</b> (Adjustable Angle)	-4 degrees to 17 degrees		
<b>Controller</b> - Programmable	SHARK Controller 75+15 Amp		
<b>Charger</b> - Off Board	110 VAC 60 Hz, 5 Amp		
<b>On Board Solar Assisted Detachable Battery Maintaining Device:</b> (Sores Solar Companion)	Max output 2.9 Amp		
<b>Battery Types (recommended)</b>	(2) NF22		
<b>Shroud Colors (all models)</b>	Candy Apple Red, Artic Blue, Hunter Green		

Note: Solar Mobility LLC reserves the right to alter or change any specification without prior notice.

# COMPONENTS

Your *Liberator™* is shipped partially disassembled in order to maximize the protection of all its parts during the shipping process.

**Caution!** The Liberator Power Chair with or without the Solar Companion should be assembled by a certified dealer or technician for safe assembly.

## Main Components

1. Frame with power module, controller cable & connectors for battery cables
2. Battery box cover (Two – one for U1 batteries, one for NF22 batteries)
3. Seat assembly
4. Solar Companion
5. Joystick
6. Batteries (NF22)



**Joystick**



**Batteries**



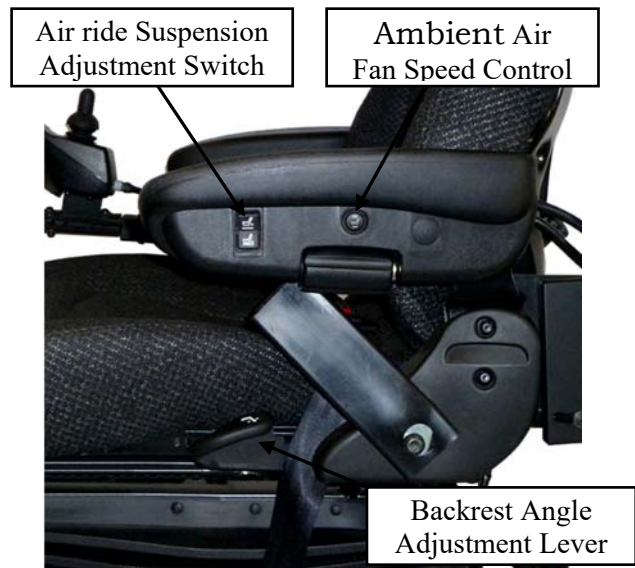
# COMFORT SETTINGS

## HEADREST HEIGHT ADJUSTMENT

1. Lift the Headrest Ratchet post of the headrest while you are pulling up or pushing down on the head rest. See figure 13.
2. The headrest will “click” to a stop in one of the preset positions.
3. Repeat step 1 until the headrest is at the desired height.



**Figure 13**



**Figure 14**

## BACKREST ANGLE ADJUSTMENT

**NOTE: The backrest can be folded down to minimize chair height during transport.**

1. Pull up on the adjustment lever (see figure 14) and push against the backrest until the backrest is in the desired position.
2. Release the lever.
3. To return the backrest to the upright position, pull up on the lever and move the backrest to the desired position.

## LEFT ARM COMFORT CONTROL SWITCHS (Figure 14)

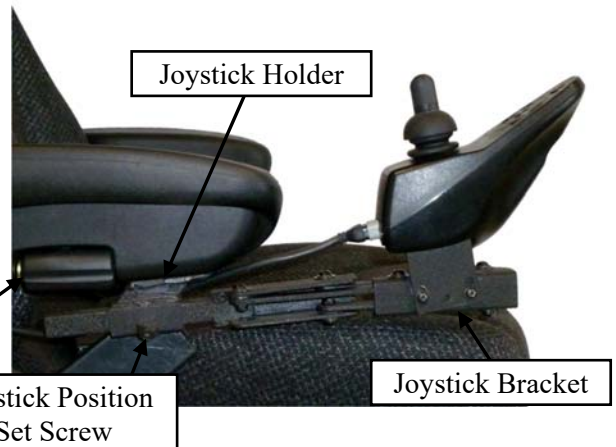
1. Adjustment Switch for Air suspension by pushing the switch on top increases the suspension, by pushing the on the bottom decreases the suspension.
2. Ambient Air Fan speed control switch up position high down position low.

# COMFORT SETTINGS



Armrest Height  
Adjustment Knob

**Figure 17**



Joystick Holder

Joystick Position  
Set Screw

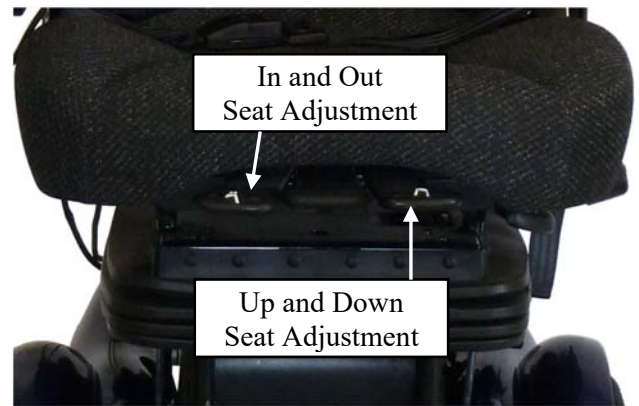
Joystick Bracket

**Figure 18**



Lumbar  
Adjustment Knob

**Figure 19**



In and Out  
Seat Adjustment

Up and Down  
Seat Adjustment

**Figure 20**

## ARMREST HEIGHT ADJUSTMENT

1. Rotate “Armrest Height Adjustment Knob” clockwise or counter clockwise (Figure 17) until you reach your desired height. Note: The knob is retained in its housing with a spring.

## JOYSTICK BRACKET LENGTH ADJUSTMENT

1. Loosen the setscrew that adjusts the joystick position. See Figure 18.
2. Slide the joystick bracket in or out of the joystick holder to desired position.
3. Tighten the setscrew.

## LUMBAR ADJUSTMENT

1. Turn the adjustment knobs at the rear of the seat to adjust your Lumbar comfort setting. See Figure 19.

## SEAT ADJUSTMENT

1. Lift left lever up to adjust seat in and out. See Figure 20.
2. Lift right lever up to adjust seat up and down. See Figure 20.



# OPERATION

Your *Liberator™* is simple to operate. However, for your safety and the safety of others, Solar Mobility LLC recommends that you carefully read and understand the following operating instructions. We also recommend that you practice operating your *Liberator™* in an area free of any obstacles. Once you have gained confidence in your ability to control your power chair, you will more easily be able to operate it in normal daily conditions.

## A WORD OF CAUTION

Before turning on the power of your *Liberator™*, take note of your environment and set your speed control accordingly. (See “The Speed Control Buttons” Figure 21) For indoor driving, we recommend that you select the lowest speed setting. For outdoor driving, we recommend that you select a speed setting at which you feel comfortable, safe, and in control of your power chair. Familiarize yourself with the features of your *Liberator™* described below and follow the instructions to safely operate your power chair.

## DRIVING: The Joystick On/Off Switch

Push the on/off button to turn on the power to your *Liberator™*. See figure 21.

The 8 LEDs (Light Emitting Diodes) will flash once and a number of LEDs will remain depending on the state of the battery charge.

♦ The LED array, which functions as the battery charge gauge, will light up. See “Battery Charging” on page 32.

Pressing the on/off button again will turn off the power to your *Liberator™*.

♦ The Joystick is intended to control the speed and maneuvering of the wheelchair only not the seat functions (which are indicated on page 12 (**Figure 14**)).



**Figure 21**

# OPERATION

## The Speed Control Buttons

These buttons provide you with a way to control the maximum speed of your *Liberator*<sup>™</sup>.

- ♦ Press the “turtle” button repeatedly to set your chair’s speed to the slowest setting (recommended for indoor operation). Slowest speed is indicated by one (1) lit LED section on the speed indicator scale.
- ♦ Press the “rabbit” button repeatedly to set your chair’s speed to its highest setting. Highest speed is indicated by five (5) lit LED sections on the speed indicator scale.

**NOTE: For your safety, the controller automatically sets the reverse speed, acceleration, and deceleration in proportion to the speed control setting.**

## The Joystick

The joystick (see figure 21 on previous page) controls the speed (up to the maximum limit set by the speed control knob) and direction of your power chair.

**NOTE: When you are not pushing on the joystick, or when you release the joystick, the joystick will automatically return to the neutral position, the chair will decelerate, as the electromagnetic brakes are applied, and come to a smooth stop.**

Pushing the joystick away from the neutral (center) position will move your *Liberator*<sup>™</sup> in the direction that the joystick is pushed.

- ♦ The farther forward or backward you push the joystick, the faster your power chair will go.

To operate your power chair, gently push the joystick in the direction in which you want to travel.

- ♦ Gentle operation of the joystick will provide you with smoother changes in speed and direction.
- ♦ Sharp or jerky operation of the joystick will result in quick and drastic changes in direction and speed.

# OPERATION

## The Joystick Display

The joystick display (see figure 20 on page 24) is a multifunctional visual display. This display provides three types of information.

1. On/Off status
2. Battery charge level
3. Fault diagnostics

### 1. On/Off Status

When you turn on the power to your *Liberator™*, the LED array will light up (see figure 20 on page 24).

- ♦ If the LED array is not lit, the controller and the power chair are not in operating mode.

### 2. Battery Charge Level

The joystick LED array is composed of six LED's.

- ♦Two red
- ♦Two amber
- ♦Four green

When all eight (8) LEDs are lit continuously, there is a full charge on the batteries. As you use your power chair and the batteries discharge, LEDs in the array will begin to turn off in descending order. A single lit red LED indicates the lowest state of operable charge on the batteries. The batteries should be charged immediately.

**NOTE: To ensure a dependable battery charge, we recommend that you charge the chair's batteries overnight. Doing this will prolong the life of the batteries and spare you loss of operational power while you are using your chair normally.**

**Do not charge the batteries when all 8 LEDs are lit, indicating that the batteries are at full charge. Charging the batteries when they are fully charged will shorten the life of the batteries.**

### 3. . Fault Diagnostics

The joystick LED array is also designed to help you diagnose any problems with the electrical components of your power chair. The LED array does this by flashing on and off in a coded sequence.

See the table on the following page to see the list of diagnosable problems and the flash code sequence.



# OPERATION/DIAGNOSTICS

## *For Liberator Units with the SHARK Controller*

**Flash codes indicate the nature of an abnormal condition directly from the SHARK Information Gauge. Without the use of any servicing tools, the condition can be simply diagnosed.**

<b>Flash Code</b>	<b>Description</b>	
1	User Fault	Possible stall timeout or user error. Release the joystick to neutral and try again.
2	Battery Fault	Check the batteries and cabling. Try charging the batteries. Batteries may require replacing.
3	Right Motor Fault	Check the right motor, connections and cabling.
4	Left motor fault	Check the left motor, connections and cabling.
5	Right park brake fault	Check the right park brake, connections and cabling.
6	Left park brake fault	Check the left park brake, connections and cabling.
7	SHARK Control Unit Fault	Check the SHARK Communications Bus connections and wiring. Replace the Control Unit
8	SHARK Power Module Fault	Check SHARK connections and wiring. Replace the Power Module.
9	SHARK Communications Fault	Check SHARK connections and wiring. Replace the SHARK Control Unit.
10	Unknown Fault	Check all connections and wiring. Consult a service agent.

**The SHARK modules are not user serviceable. Do not attempt to repair Shark modules.**

Note that joystick OONAPU (Out Of Neutral at Power Up) is not a fault. Simply by removing your hand from the joystick and allowing it to return to the neutral position, the fault will immediately clear. If the condition persists after removing your hand, the joystick may be damaged. Consult a Service agent.

# OPERATION



**Figure 22**



**Figure 23**

## **FREEWHEEL MODE**

- ♦ To disengage the gears and put your power chair in freewheel mode, turn the freewheel levers as shown. See figure 22.
- ♦ To re-engage the gears and take your chair out of freewheel mode, turn the levers as shown. See figure 23.

1. **Never put your power chair in freewheel mode when it is on a slope or incline of any type.**
2. **Never put your power chair in freewheel mode while you are operating your power chair.**

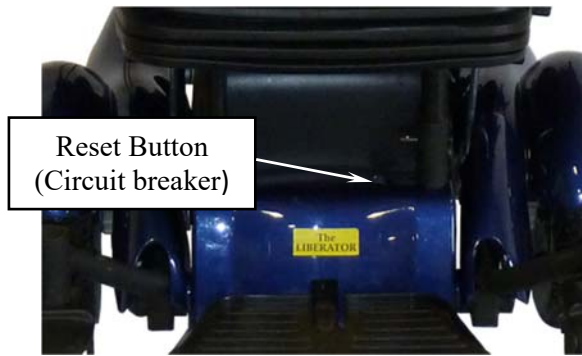
## **THERMAL ROLLBACK**

Your *Liberator*<sup>™</sup> is equipped with a safety system. A microprocessor monitors the operating temperatures of the controller. In the event of excessive heat occurring in the controller, the controller will decrease the speed of your chair. This is done to reduce the load on the electrical system and allow the components to dissipate heat. The controller will automatically set the chair's speed back to full normal when the operating temperature returns to normal levels.

## **THE MAIN CIRCUIT BREAKER**

The main circuit breaker is another safety feature incorporated into your *Liberator*<sup>™</sup>. This device monitors the amount of current being drawn from the batteries when the chair is in use. When the motors are heavily strained and too high a current draw is being placed on the batteries, the main circuit breaker will trip and bring your chair to a stop.

# OPERATION



**Figure 24**

## **Reset Button**

If the main circuit breaker trips, please wait for approximately 1 minute and then push the reset button to reset the main circuit breaker. See figure 24.

**NOTE: Usually, the thermal rollback feature is more sensitive than the main circuit breaker. We recommend that you turn off the power to the chair and wait for five minutes when the chair suddenly loses speed or power. Doing so will allow the overheated electrical components to cool to their normal operating temperatures.**

## **SWING-AWAY DESK ARM**

Your *Liberator*™ is equipped with a swing-away desk arm that provides you with the convenience of positioning your chair close to a work surface such as a table or desk.

To swing the desk arm simply push on the side of the joystick until the joystick swings to the retracted position. See figures 25, 26, and 27.



**Figure 25**



**Figure 26**



**Figure 27**

# OPERATION

## Solar Companion

### Positioning the Solar Companion.

To position the Solar Companion in the up or down position you need to locate the Tee Handle Detent Pins (See figure 28) on either side of the Companion, pull them free by grabbing the back corners of the canopy on either side one at a time to relieve tension so the pins can easily be removed, then by grabbing both sides of the canopy at the back, lift to raise it (see figures 29) or pull back to lower it, (See figure 30) then replace the Tee Handle Detent Pin (See figure 28)

**Caution!** If you are physically unable to do these functions, ask for or get assistance. The user should not be sitting in the chair when the Solar Companion is being positioned



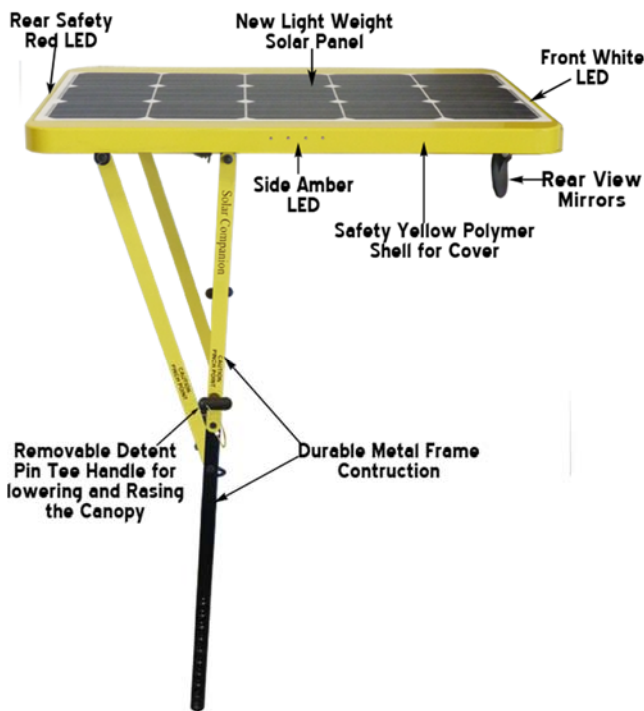
**Figure 28**



**Figure 29**



**Figure 30**



### LED Lights.

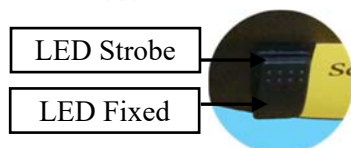
The LED lights Red in back Amber on each side and White in front are controlled by a 3 position switch. To make the light strobe or flash press the top of the switch, to make the light stay in a fixed position or (not flashing) press the bottom of the switch. (See figure 31)

### Power Port.

The Solar Companion comes equipped with a 12 Volt water tight Power Port to charge Cell Phones or other electric devices. (See figure 32)

### Rear View Mirrors.

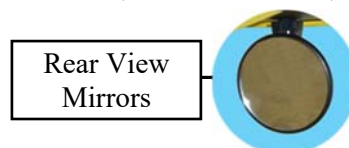
The Solar Companion come with 2 rear view mirrors for your safety, both mirrors are completely adjustable (rotating right or left and up and down. (See figure 33)



**Figure 31**



**Figure 32**



**Figure 33**



# BATTERY CHARGING

**WARNING** You must use only the AC wall charger that is supplied with your *Liberator*™. The use of any other charger on this power chair will void the warranty. Using unauthorized chargers may also result in severe damage to the batteries and/or damage to the chair. Using the wrong charger may also be a fire hazard.

## Operational Range

Depending on the use, weight of individual, terrain, and the driving conditions, the batteries of your *Liberator*™ will provide fifteen to twenty miles of operation (with the use of fully charged NF22 batteries).

**The Solar Companion** detachable solar assisted onboard battery maintaining device for the *Liberator*, is intended to be used as a supplemental energy source to your Batteries (**To get maximum extended range with the Solar Companion you need FULL SUN**), is not intended to be the main charging device for your *Liberator* power chair.

† We recommend that you charge the batteries when necessary. Battery charge should be treated similarly to fuel in a car. You would not go on a long trip with fuel low or fill up when almost full.

**Caution!** The user should not rely on the Solar Companion to consistently extend the range of the *Liberator*™. The *Liberator*™ should be charged primarily with the provided AC charging unit.

## CHARGING THE BATTERIES

Your *Liberator*'s charging system is designed for your safety and for your convenience. Follow the steps below to recharge the batteries.

1. Position your *Liberator*™ close to a standard wall electrical outlet.
2. Turn off the power on the joystick.
3. Remove the charger from the charger bag.
4. Insert the matching charger plug into the joystick's charging socket that is located at the front of the joystick. See figure 34.
5. Insert the plug at the other end of the charger power cord into a standard electrical wall outlet.
6. Disconnect the charger power cord from the wall outlet and from the joystick charging socket when the batteries are fully charged.

**NOTE: The batteries will be fully charged in four to eight hours. A full charge is indicated when the green light on the battery charger side panel turns on and all 8 joystick LEDs are lit when joystick is turned on.**



**Figure 34**

# CARE AND MAINTENANCE

Your *Liberator*<sup>™</sup> is designed to require minimal maintenance. We recommend that you periodically check the following:

**Tire Tread:** Regularly visually inspect the tire tread. If the remaining tread is less than 1/32 of an inch, have your local Liberator representative replace the worn tires.

**Motor Brushes:** Have your local Liberator representative inspect the motor brushes once a year.

**Joystick and Controller:** Protect the joystick and controller from adverse weather conditions. Moisture will damage the controller and void your power chair's warranty.

**Battery Terminals:** Regularly inspect the condition of the battery terminals. Make certain that they are not corroded. Also check to see that the terminals are securely tightened.

## **Cleaning:**

**Seat** - Wipe with a damp cloth or towel, using a mild detergent or window cleaner.

**Tires** - Brush-off loose material with a dry bristle brush and wipe with a damp cloth or towel.

**Top Cover** - Vacuum or brush off dirt, then wipe with a damp cloth or towel, using a mild detergent.

**Joystick** - Ensure that the power switch is off before attempting to clean this area. Food-type contaminants can be removed from around the joystick boot by carefully cleaning with a cotton swab, using a mild detergent. The controller body can be wiped with a damp cloth or towel, using a mild detergent.

**NOTE: Do not use free-flowing water to clean your *Liberator*<sup>™</sup>. Water and extreme temperatures are the main elements that can adversely affect your power chair and its performance.**

## **Water, Rain, Sleet, and Snow**

Water, in any form, will cause electronic malfunction or corrosion of the electrical components, connections, and the chair frame.

## **Temperature**

- ♦ At extremely low temperatures, the batteries of your power chair may freeze, preventing your *Liberator*<sup>™</sup> from operating.
- ♦ At extremely high temperatures, your power chair may operate at slower speeds due to the controller's thermal rollback feature that is designed to prevent damage to the motors and to the other electrical components of the chair.





### Consumer Limited Warranty Power Wheelchair (continued)

For the period of one year from the date of purchase, in the event of defective materials or workmanship, Solar Mobility LLC will repair or replace at our option any of the following **parts** found to be defective by an authorized Solar Mobility LLC representative:

- ◆ Bearings
- ◆ Bushings
- ◆ Seat swivel mechanism
- ◆ Rubber Components (excludes tires and all wear parts)
- ◆ Plastic Components (excludes body & all wear parts)

Items not mentioned or listed are covered at the discretion of Solar Mobility LLC. Any accessories, standard or optional, supplied by Solar Mobility LLC, are covered for a period of one year from the date of purchase with the particular unit.

#### **Warranty Exclusions:**

Solar Mobility LLC does not provide warranty on any of the following items which may require replacement due to the normal wear and tear of day to day usage:

- ◆ Tires and Tubes
- ◆ ABS Plastic Shrouds
- ◆ Armrest Pads
- ◆ Motor Brushes
- ◆ Bulbs/Fuses
- ◆ Battery Cases
- ◆ Brake Pads
- ◆ Upholstery

This warranty also excludes the following:

- ◆ Batteries (Please consult battery manufacturer for any implied warranty)
- ◆ Loss or theft of components
- ◆ Damage caused by:
  - Battery fluid spillage or leakage
  - Abuse, misuse, accident or negligence.
  - Improper operation, maintenance or storage.
  - Commercial use or use other than normal.
  - Repairs and/or modifications made to any part without the specific consent of Solar Mobility LLC.
  - Exceeding the specified weight capacity of the unit.
  - Accessories other than those supplied or approved by Solar Mobility LLC.
  - Failure to adhere to the product instructions
  - Acts of Nature, such as lightning strikes, earthquakes, etc.....
  - Circumstances beyond the control of Solar Mobility LLC.

#### ◆ **ANY PARTS ALTERED OR REPAIRED BY UNAUTHORIZED PERSON.**

#### **Warranty Service:**

Warranty Service must be performed by an authorized Solar Mobility LLC representative. Solar Mobility LLC reserves the right to replace warranted part(s) with refurbished or new part(s) at our discretion. All labor charges, service calls, transportation costs or any other charge(s) associated with the installation of any warranted part(s) are the responsibility of the consumer. Warranty is for the replacement of the parts only and does not include freight for the replacement parts. Consumers are not to return any item(s) to Solar Mobility LLC without prior written authorization. Any damages incurred while warranted part(s) are in transport are the sole responsibility of the consumer.

**There is no other express warranty.**

Implied warranties, including those of merchantability and fitness for a particular purpose are excluded. Liabilities for consequential damages are excluded.

This warranty gives you specific rights and you may also have other rights which may vary from state to state.



# Solar Mobility *Liberator*<sup>™</sup> Warranty Registration

Please type or print.

Serial # _____	Date _____	Purchased _____
Owner Name _____		
Address _____		
City _____	State _____	Zip _____

**Failure to return warranty registration card could result in significant delays in obtaining service.**

## Additional Required Owner Information

Please indicate your understanding of your *Liberator*<sup>™</sup> by completing the following information.

\_\_\_\_\_ I have read and fully understand:

\_\_\_\_\_ My Solar Mobility *Liberator*'s Owner's Manual, especially the sections on operating instructions, safety guidelines, maintenance and battery instructions.\*

\_\_\_\_\_ *Liberator*<sup>™</sup> Warranty

\* Battery Instructions - only sealed lead acid, GEL-cell or AGM type batteries should be used. Batteries must also be sealed, deep cycle, and maintenance free or battery will hinder vehicle performance and void the warranty.

\_\_\_\_\_ My Solar Mobility *Liberator*<sup>™</sup> dealer has instructed me on how to operate my power chair.

**Signature** \_\_\_\_\_

**Telephone** ( \_\_\_\_\_ ) \_\_\_\_\_

Please Mail Completed Registration Form To:

Solar Mobility LLC  
Warranty Registration Department  
1426 East 3rd Ave Suite B110,  
Kennewick, WA 99336



1426 East 3<sup>rd</sup> Ave Suite B110,  
Kennewick, WA 99336  
Tel: (509) 851-3611  
[www.solarmobilityinc.com](http://www.solarmobilityinc.com)